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FENCED IN: COMMON PROPERTY STRUGGLES IN THE MANAGEMENT OF COMMUNAL RANGELANDS IN CENTRAL EASTERN CAPE PROVINCE, SOUTH AFRICA.

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Abstract

This paper takes as its starting point the assertion that current rangeland management in the central Eastern Cape Province (former Ciskei) of South Africa, is characterised primarily by an 'open-access' approach. Empirical material drawn from three case-study communities in the region is used to examine the main barriers to management of rangeland as a 'commons'. The general inability to define and enforce rights to particular grazing resources in the face of competing claims from 'outsiders', as well as inadequate local institutions responsible for rangeland management are highlighted as being of key importance. These are often exacerbated by lack of available grazing land, diffuse user groups and local political and ethnic divisions. Many of these problems have a strong legacy in historical apartheid policies such as forced resettlement and betterment planning.

On this basis it is argued that policy should focus on facilitating the emergence of effective, local institutions for rangeland management. Given the limited grazing available to many communities in the region, a critical aspect of this will be finding ways to legitimise current patterns of extensive resource use, which traverse existing 'community' boundaries. However, this runs counter to recent legislation, which strongly links community management with legal ownership of land within strict boundaries often defined through fencing. Finding ways to overcome this apparent disjuncture between theory and policy will be vital for the effective management of common pool grazing resources in the region.

Key words: Communal lands, institutions, grazing management, fencing.

Introduction

Extensive livestock production from natural rangeland areas remains an important aspect of agricultural production and rural livelihoods in many parts of the world (Niamir-Fuller and Turner, 1999; Reid et al., 2008). The key feature connecting many of these systems is that rangeland used for grazing is held and administered as a common property, or common pool resource (Toulmin et al., 2004). Both Berkes et al., (1989) and Ostrom et al., (1999) consider common property resources as those that share two important characteristics. The first is that exclusion (or control of access) of users to these resources is difficult. The second is that each user is capable of subtracting from the welfare of others.

Inherent in this definition is the potential for the over-exploitation of common property resources as epitomised by the 'tragedy of the commons' scenario famously articulated by Hardin (1968). However, subsequent empirical and theoretical research suggests that this negative outcome constitutes just one of several alternative scenarios and that in many parts of the world effective governance systems are in place, which allow common property resources to be utilised on a sustainable basis (e.g. Berkes, 1989). Ciriacy-Wantrup & Bishop (1975) were amongst the first to explicitly recognise the major failing of Hardin's paradigm in its confusion of common property with 'open access'. Since this time, there has been considerable development of the so-called 'new institutionalist' paradigm, which recognises that the commons can be managed sustainably on a communal basis and formally defines the social and institutional environment necessary to facilitate this (Berkes et al., 1989; Ostrom, 1990).

The parameters that distinguish common property from open-access regimes have been concisely outlined by Bromley (1989) and Ostrom (1990). According to Bromley (1989, pp. 871), a common property regime (CPR) consists of

"…a well-defined group of authorised users, a well-defined resource that the group will manage and use, and a set of institutional arrangements that define each of the above, as well as the rules of use for the resource in question."

Conversely, in open access situations users have privilege with respect to the use of the resource as nobody has the legal right to exclude them. However, they have no actual rights to the resource (Bromley, 1989).

This interpretation of common property has itself been subject to considerable debate. Cousins (2000) has argued that an emphasis on defined resource boundaries is unsuited to many African grazing systems, where boundaries tend to be inherently 'fuzzy' to accommodate extensive, opportunistic herd movement. In contrast, Alden Wily (2008) highlights well-defined boundaries as a prerequisite to establishing secure tenure over common pool resources. The centrality of rules for resource use in the new institutionalist approach has also been questioned. In Africa, institutions and rules are often informal and flexible and access to resources is often secured through complex social networks and negotiation (Cousins 2000 and 2007). Thus, current common property paradigms remain contested. Nevertheless, the general division between common property and open access regimes continues to be recognised and has important implications for the management of communal grazing resources and their preservation in the longer term.

In South Africa, common pool grazing resources have been subject to considerable state interference in the way they are held and managed (De Wet, 1987; Yawitch, 1988). This has also occurred in other parts of the world (Woodhouse et al., 2000; Peters, 2004), but what is almost unique in the South African context is the sheer scale and time period over which this has taken place. The historical legacy of minority rule has given rise to a situation in which communal rangelands are almost exclusively confined to the former homeland regions of the country. These areas, designated under colonial rule and formalised under apartheid, constitute just 13% of the total land in South Africa

and were created as reserves in which the bulk of the black population was forced to reside (Cousins, 2000). Some 12.7 million people (about 30% of the national total) still live in these areas (Statistics South Africa, 2001).

The central Eastern Cape region, which constitutes the focus of this study, includes the former homeland of Ciskei and the adjacent 'Border' region. Here a particularly complex history of state-controlled land use planning has had a strong influence on the way in which rangeland is now accessed and managed by the indigenous Xhosa people. This began in the middle of the nineteenth century, when the colonial authorities started to deprive the Xhosa of their extensive, traditional grazing lands and to settle them on a permanent basis in newly created 'black reserve' areas (Hebinck and Van Averbeke, 2007). Individuals were allocated residential and arable land under title with access rights to a surrounding defined commonage area for grazing. This represented a fundamental shift in agricultural production from a system based on seasonal transhumance and shifting cultivation, to one that was effectively agro-pastoral in nature with crop production occurring on private plots and grazing on communal rangeland within fixed boundaries. The loss of pastoral mobility, combined with continuous cultivation of single plots, increased pressure on local resources. By the early part of the twentieth century this had resulted in extensive land degradation in some areas and a number of conservation and land management programmes were instigated by the government, in response (Beinart, 2003). Probably the most important of these was 'betterment planning' first introduced during the 1930s (De Wet, 1987; Beinart, 2003). Its imposition was particularly thorough in the former Ciskei, with about 79% of areas subject to some degree of planning by the early 1970s (Trollope and Coetzee, 1975).

The betterment process was concerned primarily with improving land use and its most tangible manifestation was the introduction of extensive contouring on arable land allocations and the reinforcement of existing divisions into rangeland, arable land and residential land through the use of fencing (De Wet, 1987).

Concomitant with these physical alterations was the introduction of a system of improved land management, which was frequently enforced by the state. This was primarily oriented towards agriculture and included the active management of rangeland for livestock production. An important feature of this was the rotational grazing of fenced range camps. This generally took the form of the one-herd-four-camp system, whereby one grazing camp was rested for the entire year and the remaining three were grazed on a rotational basis (Trollope and Coetzee, 1975; Forbes and Trollope, 1991). This system was perpetuated under state control in the Ciskei until the 1970s, when the South African Bantu Trust, responsible for its enforcement, was dissolved and control devolved by default to individual communities (Forbes and Trollope, 1991).

Another example of government-imposed social engineering, which was of importance in shaping population pressure and land access within the region, was the resettlement of Africans forcibly removed from so-called 'black spots' during the apartheid era. These 'forced removals' began during the late 1950s in an attempt to realise the separate development goals of apartheid. There was a considerable amount of resettlement in the former Ciskei, although the redistribution of people was far from uniform (Surplus People Project, 1983). An important driver of this resettlement was the consolidation of the Ciskei homeland during the 1970s and early 1980s (Wotshela, 2001). This consolidation process was an attempt by the apartheid government to create an autonomous, and geographically continuous, Ciskei homeland by redrawing its original boundaries and relocating any black people that lay outside them. The process involved the loss of several outlying and non-contiguous former districts of the Ciskei and their replacement with a number of so-called 'released areas', which consisted primarily of white commercial farms bought up by the South African government and allocated to the new Ciskei (Wotshela, 2001). The impact of this land reallocation was enormous, with some 50,000 refugees choosing to leave the ceded districts and be resettled in the newly acquired released areas in the north of Ciskei (Surplus People Project, 1983). As a result these areas became some

of the most overcrowded and poorly resourced within the Ciskei. Lack of available sites meant that many families were never allocated land and simply became squatters on existing land or occupied neighbouring farms (Wotshela, 2001).

Despite concerted research efforts in a number of different parts of South Africa (e.g. Ainslie, 1999; Peden, 2005; Allsopp *et al*., 2007; Moyo *et al*., 2008), we are only beginning to understand the effect this legacy of systematic state planning has had on the way common property grazing resources are now held and managed in communal areas. Nevertheless, the South African government has enacted legislation, such as the Communal Property Associations (CPA) Act (1996) and, more recently, the Communal Land Rights Act (CLRA) (2004), which seeks to acknowledge and give legal status to the ownership and management of land on a communal basis. Underpinning this is the idea that effective CPRs are already in place in communal areas or will spontaneously emerge in response to secure land rights. This concept has been strongly challenged by several commentators who hold that many of the key foundations for successful common property management are simply not fulfilled in the Eastern Cape region at present (Ainslie, 1998; Bennett and Barrett, 2007). Specifically, the erosion of traditional institutions involved in land administration, extensive social stratification, ethnic divisions and excessive problems of landlessness and overcrowding in these former homeland areas have been highlighted as potential barriers to the functioning of effective, egalitarian systems of common property management (Ainslie, 1999).

Thus, there is much about the current functioning of property regimes in communal areas that remains poorly understood. Addressing this knowledge gap is imperative if common property institutions are to be effectively tailored to the contemporary conditions of communal livestock production in South Africa. Building specifically on the work of Ainslie (1999) and Bennett and Barrett (2007) in the region, this paper aims to characterise the grazing management regimes

currently in operation in communal areas of central Eastern Cape Province. It uses three case study villages to explore the current and historical property regimes associated with communal grazing systems in the region and interprets this in the context of socio-political and natural resource constraints. It concludes by examining the general implications of the findings for the restructuring of institutions associated with common property resources as a whole in South Africa.

Method

Study Sites

The three sites used for the study were Allanwater in Lukhanji Local Municipality and Lushington and Roxeni in Nkonkobe Local Municipality (Figure 1). They were selected to represent the considerable socio-political and ecological heterogeneity in the region.

Insert Figure 1 here

Data collection

Primary data collection was undertaken at all three communities during July 2006 and involved a combination of RRA and traditional interview approaches, to facilitate triangulation. This began at each village with an overview of the different resources available through a participatory mapping exercise, which involved as many of villagers as possible and was complemented by the construction of a timeline of important events in village development (Mikkelsen 1995). Subsequently, an informal semi-structured group interview was undertaken with about 10-15 individuals at each village to provide greater detail about rangeland access and grazing management (Mikkelsen, 1995; Robson, 2002). These individuals were generally key livestock owners, mainly older males. At Roxeni, this was augmented by individual, semi-structured interviews

with key informants, including the chairman of the local farmer's association (Robson, 2002). Interviewees were purposively selected from the group work, to provide greater depth based on their personal experience and different perceptions of changes in resource use. Finally, transect walks were undertaken around each settlement with purposively selected key informants, to help corroborate the information from the previous work and facilitate elimination of inconsistencies (Mikkelsen, 1995).

This empirical work was complemented by concomitant secondary data collection, which provided the background to the sites in terms of the basic social and agro-ecological data that were available.

Results

Findings from the three villages are grouped under key headings, beginning with a background overview of the settlements followed by an outline of the grazing resources and their management in more detail. Table 1 summarises the key socio-political and ecological features of each village.

Socio-historical and geographical overview

Although the three research villages lie within in relatively close proximity to one another (Figure 1), they differ markedly with respect to many of the social and ecological factors that characterise this highly heterogeneous area.

Historically, Roxeni is distinct from the other two villages in that it has a relatively long history of settlement. Together with the neighbouring villages of Gaga and Ely it formed part of the Gaga Tribal Authority, which was planned by colonial surveyors during the 1860s, with land allocation under quitrent tenure[1]. As part

[1] Quitrent is a form of land title allocated to Africans under colonial rule, which provided secure tenure on provision of annual rental fee.

of this system, land was formally subdivided into an area of common grazing and an arable land allocation, where the villagers had their fields. The current extent of each of these is 978 ha and 125 ha, respectively giving a total area of 1103 ha for the village (DALA, 1997). In contrast, Allanwater and Lushington are relatively recent 'villages' established on released areas during the political and geographical reordering of the Ciskei during the 1970s. Both are composed of a number of formerly white-owned, commercial livestock farms although they differ considerably in their spatial arrangement.

Allanwater consists of a single settlement, the origins of which can be traced to the illegal occupation of the released farm 'Allanwater' in 1976 by a small group of refugee families who had arrived from the ceded Glen Grey district of the former Ciskei (Wotshela, 2001). Although this released farm was not designated for occupation a settlement was established ('*Diphala*') and in 1986, this was formalised when the local Department of Agriculture intervened and allocated 120 residential sites under communal tenure. However, no formal tenure was granted over arable plots, nor was there any official demarcation of grazing land (Wotshela, 2001). Since this time the village has expanded considerably and although it is still referred to as "Allanwater" it now includes portions of several other adjacent former farms, amounting to some 5,000 ha in total extent (M. Goqwana, pers. comm.).

In contrast, the village of Lushington consists of four distinct settlements; Elundini, Elukhanyweni, Khayelitsha and Ekuphumleni. These are distributed over an extensive area, and have complex and very different histories of growth and development. Elukhanyweni ('Eluk') and Khayelitsha are located close together and were the first to be established during the late 1970s, as small settlements of former farm workers. These were subsequently expanded through the migration of people from the overcrowded and degraded Glen Grey and Herschel areas of the former Transkei. This migration actively continues, mainly involving relatives of existing residents. Elundini is the most geographically

isolated settlement, situated some 2 km from Eluk and Khayelitsha. Its origins are somewhat different, with most inhabitants having been forcibly removed from the nearby Tyume Valley area in 1983, to facilitate the building of a large dam. During the mid-1980s, these three settlements were formally surveyed by the Department of Agriculture, which approved the allocation of residential and arable land, although without formal title. Ekuphumleni is a much more recent settlement founded by individuals looking to break away from the other settlements. Importantly, it has been established without formal land allocation, on an area of land designated as arable. This has caused resentment amongst other villagers at Lushington, many of whom consider it a squatter settlement.

The three villages also differ in terms of key development indicators. Whereas Roxeni is relatively wealthy (mean annual household income of R 18,842), Lushington (mean annual household income of R 5,369) and Allanwater (mean annual household income of just R 3,473 and >50% of households with no cash income at all) are relatively poor in cash income terms. The same disparity is also evident in educational attainment, with over 97% of inhabitants at Roxeni of 20 years of age or greater having received at least a basic primary education, whereas 17% of those of equivalent age at Lushington and 26% at Allanwater have received no formal schooling whatsoever (Statistics South Africa, 2001). These data help to corroborate the social and geographical identity of these villages. Roxeni is effectively a commuter settlement benefiting from close proximity to a main highway and the nearby towns of Alice and Fort Beaufort (Figure 1), whereas Lushington and Allanwater are relatively isolated, rural settlements where people depend more on government social transfers and their local resources for a livelihood. Allanwater's largely pastoral identity is underlined by the fact that almost all households own livestock and most are active in marketing their animals, which enables 16% of households to make a livelihood out of full-time farming (King, 2002). Furthermore, livestock holdings at Allanwater are considerable with 1,006 cattle, 1,560 sheep and 1,263 goats recorded during 2002 (ECDA, 2002). This gives a mean holding of 16 cattle, 55

sheep and 18 goats per household, which is very high for the region (Ainslie, 2002; Van Averbeke and Bennett, 2007). In comparison, overall holdings at Roxeni amounted to 361 cattle, 274 sheep and 783 goats in 2006 (B.S. Mlumbi, pers. comm.), which represented a marked decline from the 452 cattle, 438 sheep and 1,122 goats held at the village in 1997 (DALA, 1997).

The regional heterogeneity of the natural environment is also represented in the three villages. Roxeni, Lushington and Allanwater are situated at mean elevations above sea level of around 600, 900 and 1500 m, respectively. However, this increase in elevation does not produce an increase in mean annual rainfall (MAR) as might be expected, since there is a general trend of decreasing rainfall with distance from the coast (Marais, 1975). Indeed, Roxeni has the highest MAR of 616 mm (B.S. Mlumbi, pers. comm.), with a co-efficient of variation (CV) of 0.22, although the local veld (rangeland) classification is False Thornveld of the Eastern Cape, a form generally representative of areas of lower rainfall (DALA, 1997). MAR at Lushington is estimated through extrapolation at 600 mm (CV 0.24) and the local veld type is karroid shrub with Dohne and Highland Sourveld at higher elevations. At Allanwater long term (1955-2004) rainfall data are available from nearby Waterdown Dam, which suggests a MAR of 472 mm (CV 0.32). The local rangeland is composed of two main *veld* types, Dry *Cymbopogon-Themeda* veld and Karroid *Merxmullera* Mountain Veld (King, 2002). The relatively low CVs of rainfall at all three sites underline the fact that the grazing ecology of the region is predominantly equilibrial in character making much of it amenable to semi-intensive management through techniques such as rotational grazing and resting (Scogings et al., 1999).

Grazing management

Grazing at all sites mostly involves the use of formally designated rangeland (veld) areas but also makes use of the arable land allocations, which are opened to grazing during the dry season as an additional forage reserve.

Management of rangeland grazing

Given that it has existed as a planned settlement for more than a century longer than the other two villages, Roxeni has an unsurprisingly more complex history of engagement with rangeland management. Nevertheless, for a long period after its initial planning, grazing management at Roxeni appears to have followed a fairly consistent pattern. According to some of the older men at the village, the original range area was extensive and divided into nine discrete sections ('camps' as the villagers referred to them) by natural features such as small watercourses and erosion channels. A system of rotational resting was practised (*urawulane*), whereby one section was rested for a period of one year and the remaining eight were grazed simultaneously. Each year the rested section changed. The decision concerning resting was made by the headman of the village during a meeting involving the local men. It was then the responsibility of individual livestock owners to ensure that their stock did not graze in the rested area and also to ensure that livestock from neighbouring villages did not encroach on Roxeni's grazing land. Contravention of the grazing rules resulted in animals being impounded and owners fined to facilitate their release.

The arrival of betterment planning in the area resulted in several changes in land use. Early betterment efforts at Roxeni were fiercely contested, as there was an initial proposal to move the entire community to establish a white-owned commercial fruit operation. As a consequence, when betterment was finally implemented in 1965, much of the available grazing had been reallocated to the neighbouring villages of Gaga and Kwezana. What little grazing land remained was fenced into four camps surrounded by a perimeter fence, in line with grazing management policy at the time. The management system also changed significantly. Rotational resting was retained in one of the camps for a period of one year but grazing of the three active camps was now undertaken on a rotational basis. Decisions concerning both of these factors were made centrally by a newly formed 'Bantu Trust' located in nearby King Williams Town and administered by the village headman and an appointed grazing committee. At a

practical level enforcement was undertaken by a local ranger who was selected from the village and paid by the government. Fines for non-compliance continued as previously.

Centralised control over grazing management disappeared during the 1970s with the demise of the Bantu Trust. However, a system of internal management using the betterment fences persisted until the popular overthrow of the Ciskei government of Lennox Sebe in 1990. Immediately after this the headman system disintegrated and in this institutional vacuum rotational resting and grazing practices were abandoned and the camp and perimeter fencing was removed. With the fencing now almost completely gone, livestock from Roxeni and the surrounding villages currently free-range over a considerable area of common grazing land, with little or no centralised control on their movement. However, institutions associated with land use have re-emerged. Undoubtedly the most important of these is Roxeni Farmer's Association (RFA), created in 1997 as a Common Property Association (CPA), with legal status. This is open to all members of the community upon payment of an annual membership fee, has an elected committee (including a Chairman), and appears to be responsible for all aspects of arable and livestock management. However, in the absence of fencing to provide strong boundary delineation, it seems incapable of exercising any form of control over when and where livestock graze, which creates considerable pressure on key resource areas at different times of the year. In particular, a relatively large dam constructed during the early 1980s in one of Roxeni's camps draws in considerable numbers of cattle from the surrounding villages, especially during the dry season. The RFA is currently reluctant to alienate their fellow pastoralists in neighbouring villages by cutting off access to this resource, although this movement of animals may be accelerating local soil compaction and erosion.

In comparison to Roxeni, Lushington and Allanwater have relatively brief histories of engagement with rangeland management. Institutional control at both villages

has gone through two distinct phases. Initially, Lushington was incorporated into the AmaGwali Tribal Authority and a headman was appointed at the village. His role was both as intermediary for the articulation of the needs of the village to the tribal authority and in the settling of local disputes relating to matters such as stock theft. Although most of the fencing was still in place when the commercial farms were inherited by the new settled inhabitants, there seems to have been little central enforcement of rotational resting or grazing of the rangeland, even under the homeland dispensation of the 1980s. Rather, livestock were allowed to graze on a free-ranging basis over all camps simultaneously. As at Roxeni, when the headman structure was abandoned in 1990, what remained of the fencing was destroyed during the subsequent period of civil unrest. Thus, the current resource management situation involves no fencing at all, apart from in those boundary areas adjoining either government ranches or the remaining commercial farms in the area.

Although starting from similar beginnings the early history of grazing management at Allanwater was very different. After initial incorporation into the Thembu Tribal Authority, a headman, his associated committee and a ranger were appointed from within the village. However, in contrast to the *laissez-faire* approach at Lushington it appears that a system of rotational grazing was retained. Moreover, it appears that grazing management decisions were still community-driven. The community would, for example, decide which camp(s) were to be rested during the coming year. The headman's role in this seems to have been largely administrative, as he would be required to complete the necessary paperwork to inform the local magistrate of this decision.

The second phase of institutional development involved the formation of democratically elected Resident's Associations (RA) at both villages, following the civil unrest of the early 1990s. At Lushington this structure currently consists of a separate committee at each of the four settlements, which together feed into an overarching 'umbrella' RA. These committees have an important function in

the allocation of residential and arable land at each settlement, particularly to new arrivals from outside the village. The main function of the RA seems to be as a point of contact with external institutions such as NGOs and the local Department of Agriculture rather than resource management *per se*. At Allanwater the RA alone is responsible for both of these functions. However, the key point of institutional departure between the two settlements is the presence of an additional civic structure at Allanwater, Vukani Farmer's Association (VFA), charged with livestock management. This is analogous to the RFA at Roxeni and consists of all members of the village led by a committee of 6 elected members and requires the payment of an annual membership fee. This covers costs such as the purchase of chemicals used in the communal dipping of village livestock and the repair of community fencing. The management committee of VFA decides which camps are grazed and at what stage of the year. It is also able to punish deviant behaviour through the imposition of fines. Importantly, this gives an implicit sense that, in addition to receiving other communal benefits, livestock owners at Allanwater are collectively managing their grazing resource.

These differences in institutional arrangements are reflected in the levels of grazing management in operation at each settlement. At Lushington a 'free for all' grazing scenario now effectively prevails, with grazing taking place on an entirely *ad hoc* basis, even involving animals from neighbouring villages. There are no formalised rules to control when and where livestock graze, and indistinct community boundaries characterise certain areas. The only enforcement is that practised by white farmers on adjoining commercial grazing areas, who impound trespassing communal stock and force the owner to pay a considerable fine to retrieve them. In contrast, grazing at Allanwater has consistently been under some form of community management. The current management system involves the complete resting of at least two of the camps each year and grazing of the remainder. However, resting is not undertaken on a pre-determined, rotational basis but rather is dictated by the perceived condition (heavily grazed or not) of a given camp. An important factor in this is the presence of wire grass

(*Elionurus muticus*) as those camps with greater proportions of this tend to be rested more often. Furthermore, grazing of the open camps is not continuous and seems to be driven largely by season and availability of water as well as proximity to the residential area of the village. The camps on the eastern side of the village are grazed during the growing season, as access to permanent water is problematic here and the animals have to rely on temporary rain-fed ponds. During the subsequent dry season the eastern camps are closed and animals graze the camps on the western side, as more permanent water points are available here. The need to graze smallstock in relative proximity to the residential area, due to the (perceived) threat of theft or attack by wild animals, also means that most of the camps surrounding the homesteads are grazed by sheep on a continuous basis. Thus, the grazing system currently in operation appears to be based on a combination of indigenous knowledge and flexibility in response to practical constraints.

Management of arable grazing

Unlike grazing of the formal rangeland camps, control over which differs markedly between the villages, grazing of the arable lands as an additional forage reserve for livestock is subject to much greater control at all three sites.

At Roxeni this control is facilitated through the use of fencing. Although the arable land allocation as a whole is fenced off from the formal grazing area only a very small number of individual plots have perimeter fencing, erected and maintained by each respective title-holder. These are the only fields in which crop production is now undertaken, as the threat of livestock damage is a major deterrent to cropping outside fenced fields. Fencing of individual plots has also provided greater autonomy to a limited number of owners in the use of these areas for the grazing of their livestock. Crop residues in these plots may be grazed on an individual or communal basis depending on the preference of the owner of the field. Some owners even retain rights over the grass available in their fenced allocations and use it exclusively for their own stock.

Fencing is also used to control the grazing of arable land at Lushington. Most of this has been retained from previous commercial farming and many people now have access to individually fenced arable plots, which they maintain themselves. These people are able to exercise exclusive grazing rights over these areas as dry season forage reserves for their own livestock. If a summer crop has been grown, the residues will be reserved for their cattle, which are then grazed in the field. This is strictly enforced and any other livestock that gain access to this resource will be driven away or even impounded by the field owner. In unfenced areas, maintenance of individual rights over crop residues is only possible if they are cut and carried to the homestead for grazing. This seems to be the norm, as very few individuals leave crop residues to be grazed *in situ*.

As at Lushington, crop production at Allanwater has been perpetuated in the areas demarcated as arable under the previous commercial farming system but there is now considerable sub-division of plots. Although the arable blocks retain their perimeter fencing no individual plots are fenced. Nevertheless, a large proportion of these plots continue to be cultivated each season and the residues are used to supplement available livestock grazing. However, these are not grazed *in situ* but rather are cut and carried to the homestead for livestock consumption as at Lushington. The only *in situ* grazing that takes place on the arable lands involves dry season forage crops. Several individuals continue to cultivate oats and barley for livestock consumption at this time, often inter-cropping them with maize. These are grown primarily for winter lambs and ewes in milk although animals must be closely watched to ensure that they graze only the forage crop that has been cultivated by the owner. Thus, there is a strong desire to preserve individual grazing rights over both maize residues and forage crops.

Perceptions of change and rangeland quality

At Roxeni, livestock owners perceive the historical changes that have occurred within the management system in a variety of different ways. Whilst some regret the loss of the fenced camps due to the flexibility it gave in livestock management, most are happy that the fenced rangeland perimeter is now gone as it no longer formalises the boundary of the post-betterment grazing lands and enables cattle to range over a far wider area than was previously possible. However, there is a feeling amongst some owners that the absence of fixed boundaries combined with the presence of the permanent dam has led to increased pressure on local rangeland resources during critical periods such as the dry season. The overall quality of grazing resources within the village was perceived as quite low with few species of good quality being identified during transect walks. Instead areas dominated by *Acacia karroo* bush, or which had been invaded by substantial amounts of unpalatable karroid shrub, were highlighted. Much of the remaining grass component is dominated by poor quality perennial species such as *Aristida congesta* and *Cynodon dactylon*. Soil erosion is also heavy and has been documented as a significant problem in the area (Weaver, 1989). The poor quality of the range and extensive soil erosion is corroborated by a local soil conservation report, which determined the local carrying capacity at just 18 ha/AU, which is very low for the veld type (DALA, 1997).

Like Roxeni, the rangeland resource at Lushington is generally of poor quality. In areas of lower elevation, the grass sward tends to have greater cover but is dominated largely by unpalatable species such as *Elionorus muticus*. At higher elevations the grass sward is patchy and consists largely of heavily grazed tufts of *Themeda triandra* supplemented by less palatable perennials such as *Cynodon dactylon* and *Sporobolus africanus* and annuals such as *Eragrostis capensis*. There is also considerable intrusion by small unpalatable shrubs such as *Felicia filifolia*. A strong feeling prevails amongst several of the livestock owners from Lushington that fencing of the rangeland is necessary to allow them

to manage it more effectively as a grazing resource and to try and rehabilitate areas that had become unproductive. This is somewhat ironic given that the community was unable to maintain the fencing it inherited from the commercial farmers. However, the issue of fencing is very political. It was suggested that the destruction of the original fencing was, at least partly, a deliberate attempt to make a break with an oppressive past during a turbulent period of unrest in the early 1990s. At the time the research was undertaken, there was a proposal from the local Department of Agriculture to re-fence a substantial proportion of the rangeland perimeter at the village. Whilst this would provide much-needed short-term work for some, it was a highly sensitive issue, which was strongly contested by some sectors of the community.

In contrast to the other two villages, the grazing resource at Allanwater is in relatively good condition, with a local carrying capacity of 7-9 ha/AU in most areas (G. Jordaan, pers. comm.). This is reflected in the relatively high productivity of stock at Allanwater. For example, mean wool clip during 2001 was 3.9 kg per sheep (King, 2002). This compares favourably with 2.3 kg per sheep in the degraded communal area of Herschel and is close to commercial yields within the Eastern Cape, which historically averaged around 4.5 kg per sheep (EDA, 1994 in Vetter, 2003). At a subjective level this is also underlined by the perceptions of the local people themselves, 89% of whom believed their grazing resources to be in good or very good condition, when questioned as part of an earlier study (King, 2002).

Insert Table 1 here

Discussion

These case studies not only illustrate the extent to which CPRs are being practised in central Eastern Cape Province but also highlight several key axes of struggle in their operation, as discussed below.

Institutions

The lack of effective institutions charged with overseeing rangeland management has repeatedly been highlighted as one of the main limitations to the existence of functioning CPRs in both the Eastern Cape (e.g. Ainslie, 1999; Bennett and Barrett, 2007; Moyo et al., 2008) and in other areas of South Africa (e.g. Atkinson et al., 2006; Alden Wily, 2008). In this study, the critical nature of these institutional structures in resource management is underlined by the community of Allanwater, which has successfully separated agricultural management (dealt with by VFA) from broader community issues (dealt with by the RA). VFA, whilst ostensibly still 'nested' within the broader framework of the RA, has the autonomy to deal specifically with agricultural issues and thus to act independently and flexibly in the management of the grazing resource. This accords with Ostrom's (1990) emphasis on the value of nesting institutions within broader structures to facilitate effective management. Thus, the autonomy of VFA obviates the need to involve the RA in day to day management decisions, leaving it free to focus on higher level issues associated with land allocation and engagement with outside agencies.

The democratic legitimacy of VFA also limits the possibility of *ad hoc*, unelected 'committees' associated with grazing management existing in parallel with RA structures, as occurred in several post apartheid communities in the former Ciskei (Ainslie, 1998; Bennett and Barrett, 2007). Indeed, in the absence of strong institutions specifically charged with resource management grazing tends to be uncoordinated and individually driven. This is illustrated by the situation in Lushington, as well as numerous other settlements in the region such as the village of Guquka, where an ineffectual RA was supplanted by an *ad hoc* grazing committee, which served only the interests of a landed minority (Bennett and Barrett, 2007). Although Lushington has committees within each settlement, charged with land allocation, they seem to play no role in managing the grazing resource which, in any case, should ideally rest with a structure that is representative of all four settlements. Indeed, the fundamental constraint to the

introduction of such a structure appears to be the fragmented nature of the 'village' itself. This underlines the continuing legacy of apartheid's social engineering policies in constraining current community cohesion and development in the former homeland areas.

Political division

A key aspect of the institutional weakness apparent at Lushington seems to be the politically divided nature of the village. As pointed out above, the settlements of Eluk and Khayelitsha have a common origin in their foundation by local ex-farm workers. In contrast, the inhabitants of Elundini, as refugees from a neighbouring district, have no historical connection with the area and the settlement has a strong, separate identity of its own. The new 'squatter' settlement of Ekuphumleni has little political identity and appears to still be viewed with resentment by the other, more established settlements. These institutional weaknesses may also be exacerbated by the apparent 'open door' policy to new arrivals being adopted at Eluk and Khayelitsha. A considerable level of immigration, particularly from the Herschel and Glen Grey areas, continues to be sanctioned by the committees of each settlement, seemingly on the basis of ethnic and familial ties. Such political and ethnic division, as a consequence of apartheid's divide-and-rule policy, is apparent throughout the former Ciskei. For example, in the Tyefu area of Peddie, Ainslie (1999) has shown how the political and ethnic divisions fomented by apartheid have contributed to institutional dissonance in the control and management of natural resources. The legacy of apartheid planning also lives on in other parts of South Africa, where political divisions over resource management continue to exist, particularly between landed (politically powerful) and landless groups (e.g. Lebert and Rohde 2007).

In contrast, the strong institutional structure present at Allanwater, is supported by an environment of relative political unity. Most of the inhabitants of the village have a common origin and, apart from a brief influx of outsiders during the early

1980s, the settlement has expanded largely through natural increase (Wotshela, 2001). Under these circumstances people appear to have political cohesion and a willingness and ability to cooperate for a perceived common good.

Social stratification

It is widely accepted that the majority of households in the central Eastern Cape now depend on cash income from jobs (either earned by resident householders or sent back from urban areas in the form of remittances) and state transfers (mainly pensions) for their livelihoods. Income generated within villages, particularly from agriculture, forms only a minor component of the average income of most households (Hebinck and Van Averbeke, 2007). Moreover, although livestock act as a form of livelihood security (rather than direct cash income) in many households, ownership is increasingly concentrated in the hands of a relatively small minority (Ainslie et al., 2002; Van Averbeke and Bennett, 2007). It is thus difficult to characterise settlements in the region as genuinely agrarian in nature as many now effectively function as 'commuter villages' for local towns. This process of 'depeasantisation', although particularly marked in this area of South Africa, is also being experienced in many other parts of Africa (Bryceson, 2000 cited in Peters, 2004).

The relationship between socio-economic stratification and level of effective commons management is evident in the case villages. Roxeni forms part of the rural commuter belt for the local town of Alice (Figure 1) and livelihoods depend largely and increasingly on social transfers and waged income. This is reflected not only in the relatively high mean household income in Roxeni but also by the near absence of crop production and the relatively low and declining level of livestock ownership. Although issues surrounding land access and management are of continuing importance at the village, the prevailing social structure means that few people depend on the land for their livelihood. This may partly explain why, despite the existence of RFA, the village has been unable to engage in effective rangeland management. In contrast, Allanwater demonstrates that

some settlements in the former Ciskei remain fundamentally agrarian in character and, importantly, support effective CPRs for rangeland management. There is an almost ubiquitous engagement with agriculture amongst the inhabitants of Allanwater, with a significant proportion of households depending on agricultural activities for their livelihoods (King, 2002). Furthermore, most households at the settlement are very poor, suggesting limited engagement with waged income (Statistics South Africa, 2001). This largely shared sense of social identity appears to have been important in fostering the communal ethos necessary for effective CPR management.

Resource definition

In addition to social differentiation, a more pressing influence on the inability to engage in co-ordinated rangeland management at Roxeni is the lack of definitive boundaries and the associated problem of an amorphous user group, particularly during the dry season. Under these circumstances, attempts at range management from within the village are fruitless when outsiders are not engaging with the same management rules. Both Bromley (1989) and Lawry (1990) have highlighted the inability to enforce resource boundaries and thereby control user access as a key constraint to the management of common pool resources. More recently, Alden Wily (2008) has emphasised the importance of boundary definition as a precursor to the secure ownership and management of commons resources.

Roxeni's struggle to enforce historical rangeland boundaries stems partly from the very high local pressures on limited rangeland resources. This is symptomatic of the planned areas of the former Ciskei, where a long history of natural population growth, combined with limited land allocations and forced resettlement policies, has created an environment in which localised pressure on resources is high, with the breakdown of mechanisms of land management and associated land degradation (Ainslie, 1998, Cocks et al., 2001). However, the lack of boundary definition cannot be considered entirely a result of external

forces. Rather, there is a feeling that the community, at least in part, chooses not to enforce its boundaries to facilitate access to more extensive grazing beyond the village, particularly the areas lost under betterment planning.

Moreover, this lack of defined rangeland boundaries finds some resonance with more recent interpretations of common property theory in its application to African grazing systems. Cousins (2000) emphasises how 'fuzzy' boundaries, where territories are not divided into discrete land units that only one group has access to, are an inherent feature of common property regimes in Africa and facilitate access to key resources at different times of the year. Thus, the current situation at Roxeni might be interpreted in this way, with fuzzy boundaries enabling access by all local stock to a greater degree of spatial heterogeneity in terms of available forage and to permanent water during the dry season at Roxeni dam. Despite this, it remains difficult to construe the current system as a genuine CPR as the 'fuzziness' in place seems to have emerged by default and there remains a distinct lack of co-ordination between settlements or any form of basic rule structure associated with resource access and management.

Availability of grazing

The lack of adequate grazing resources at Roxeni contrasts sharply with Lushington and Allanwater, which have access to considerable areas of communal rangeland. Allanwater in particular, seems to have benefited from a relatively small user group and a large allocation of land. Much of this fortune has an historical basis. The decision to occupy Allanwater provided the original squatter families with a definite resource advantage over their neighbouring, formally settled counterparts (Wotshela, 2001). In this respect, Allanwater might effectively be considered as a geographically isolated oasis of relative (natural resource) privilege. Such historical privilege, whilst rare, does occur in other parts of the former Ciskei. Cocks et al., (2001, pp. 5), outline a very similar scenario in which the "….fortuitous land expropriation policies of the former (Ciskei) government" has enabled the Masakane community (a group of former

farm workers and their families) to lay claim to extensive grazing land comprising several former commercial stock farms, despite being surrounded by overcrowded communities with limited grazing access. Likewise, the village of Koloni in the Middledrift area, benefited from being a former mission station and pioneer site for betterment in the region, receiving a large allocation of land and no influx of people forcibly removed from 'black spot' areas (Ndlovu, 1991). This has been fundamental in the perpetuation of a recognisable CPR at the settlement (Bennett and Barrett, 2007). This suggests that spatially inadequate grazing resources may be a fundamental constraint to the maintenance or development of CPRs within many communities, a view corroborated by Ainslie et al., (1998). At the broader level, the importance of spatially adequate grazing in supporting functionally recognisable CPRs has been underlined by comprehensive research undertaken in the Namaqualand area of South Africa (Allsopp et al., 2007) and in other parts of Africa (e.g. Niamir-Fuller, 1998; Niamir-Fuller and Turner, 1999).

Fencing

Related to this is the importance of fencing in exercising control over access to grazing resources. Although, historically, fencing has been fiercely contested and politically contentious, its retention seems to be correlated with the perpetuation of basic CPRs in the region. This is evidenced not only by the case of Allanwater but also by the other communities such as Koloni, discussed above. It also finds support in the case of the Tyefu area of Peddie, where fencing was resisted, and an open access grazing regime now prevails and rangeland is highly degraded (Ainslie, 1999). There is a sense that local communities may now be unable to engage in effective communal management of grazing resources without fencing. Persistent state intervention in the region through extensive betterment and acquisition of fenced commercial farms for communal occupation has encouraged a doctrine of rangeland management premised on the need for grazing boundaries to be defined through perimeter fencing - a view that still finds active support within the provincial Department of

Agriculture. There is a clear irony in communities such as Lushington and Roxeni, which destroyed their fences as political statements, expressing a desire for their reinstatement to facilitate boundary definition. This serves to underline the endemic 'fencing complex' (i.e. fencing consistently being seen by both communities and authorities as a panacea for grazing management), which prevails in the region. Although this scenario finds some parallel with the organisation of the government grazing schemes in communal areas of Zimbabwe (Scoones, 1999), it is in marked contrast to the situation in many other parts of Africa where 'fuzzy' boundaries are the norm and institutions controlling the flexibility in resource access this necessitates are well developed (Cousins, 2000).

Private grazing of arable lands

The empirical findings from all three villages suggest that grazing of available arable forage during the dry season is controlled almost exclusively on an individual basis, irrespective of the extent of communal management being exercised over rangeland grazing. Importantly, the retention of individual rights over arable forage does not appear to be related to *de jure* security of tenure, as suggested by Bennett and Barrett (2007), as private rights over crop residues and forage are exercised at both Allanwater and Lushington where there is no formal title to land. Nor is secure fencing around individual plots a pre-requisite for retention of individual rights over forage. At Allanwater and Lushington, rights over crop residues in unfenced fields are exercised through cut and carry. Furthermore, rights to cultivated dry season forage, which is grazed *in situ*, are also retained at Allanwater by the vigilance of individual owners, despite the complete absence of fencing around individual plots. However, *in situ* communal grazing of forage does seem to occur at all the settlements on a default basis, for example, where individuals have grown a summer maize crop in an unfenced plot and have not harvested the residues. Under these circumstances there seems to be an implicit acceptance that owners have forfeited their individual rights.

This strong distinction of property rights between arable plots and rangeland is borne out by studies from other parts of Africa. Scoones (1999), for example, has documented how private tenure rights can be retained over crop residues and grass through harvesting or use of fencing. In a more extreme case of commoditization, Southgate and Hulme (2000) outline how, in some parts of Kenya, crop residues are rented out to pastoralists by individual producers during the dry season.

Conclusions and recommendations

It is clear that in the communal grazing lands of central Eastern Cape Province, struggles continue in most areas, both within and between communities, over the management of common pool grazing resources. Current struggles over common property grazing occurr along a number of axes, which are often interlinked. Indeed, some appear to be almost ubiquitous and thus critical to the effective functioning of common property management systems in the region. Importantly, these provide an insight into the types of interventions that may help to develop and strengthen common property regimes which are suited to local grazing systems. Just as Cousins (2000) has argued for a broader interpretation of the 'new institutionalism' in an African context, the application of common property theory in South Africa, particularly in the central Eastern Cape region, requires further development. The region has a tumultuous political history, which is largely unique, even within colonial Africa, and it is vital that interventions give adequate recognition to the considerable social, economic and ecological (in the sense of endowments of and command over natural resources) heterogeneity that this has created.

One critical intervention will be the creation of effective institutions for the management of rangeland grazing. A specific aspect of this will be the

development of institutions responsible for cooperative governance of local rangeland resources (as emphasised by Ainslie, 1999), which has registered virtually no progress in the post-apartheid period. This is paramount, as one of the fundamental constraints to the functioning of CPRs in the region is the limited, and now effectively inadequate, grazing resources to which many communities have legitimate access (Ainslie et al., 1998). Whilst land redistribution does offer a possible solution for communities in proximity to commercial farms and/or state land, most will have to continue to make do with the little they already have and simply make more effective use of it. Thus, a key part of this will be the creation of local institutions, which have a resource management remit that extends beyond existing, often (ecologically and socially), arbitrary community boundaries and which can facilitate grazing at a more extensive scale. Importantly, this will also require the development of tenable and enforceable resource management rules to avoid simply legitimising existing open-access scenarios. One approach to this might be to 'nest' institutions of cooperative resource management within higher level local governance structures, which have broader administrative functions (Lawry, 1990). Where co-management is required between several neighbouring villages, as at Roxeni, the local municipal ward committee might be the appropriate place to embed this. However, this concept might also be extended to communities consisting of separate settlements, such as Lushington, where management within the community is paramount. Under these circumstances the community's own umbrella RA structure, might be an appropriate entity in which to nest such an institution.

The potential for the formation of such cross-community, cooperative management institutions and their political legitimacy is currently limited by existing legislation. The Communal Property Associations (CPA) Act (1996), gives communities legal rights in holding and managing property in terms of a written constitution (Republic of South Africa, 1996; Cocks et al., 2001), and the more recent Communal Land Rights Act (CLRA) (Republic of South Africa,

2004), has also persisted with an approach of vesting land ownership and management rights within discrete and well-defined 'communities'. Although these approaches may prove relatively effective where resources are well defined and pressure is relatively low (e.g. VFA at Allanwater), the Roxeni (RFA) case demonstrates their inefficacy when historical village boundaries are no longer enforceable in the face of heavy local grazing pressure. Rather, a legislative approach which has greater flexibility in its application according to local needs is required. Specifically it must be used to cater more effectively for those communities with limited land access, by formalising statutory and enforceable rangeland access and grazing management rights (where agreed) across existing, often arbitrary, boundaries. One interesting solution to this might be the split property rights approach advocated by Sandberg (2007), whereby several entities (communities) are able to own land collectively and equally. This would enable current rangeland access patterns across several communities to be formalised on a legal basis.

Another vital aspect of this will be the provision of government support in helping communities to develop and maintain effective institutions charged exclusively with cooperative resource management, and embedding these structures at the appropriate level of local governance (Cocks et al., 2001; Cousins, 2007). However, this is unlikely to be straightforward since, as Sandberg (2007, pp. 614) points out, institutional development depends on rights and duties, which have already been established, leaving only '…a narrow space for new institutional design efforts'. Moreover, it is also likely to be time consuming and costly given the current absence of such institutions in most areas of South Africa (Mostert and Piennar, 2004 cited in Alden Wily, 2008). In addition, there will need to be ongoing support from local agricultural extension services in the development of appropriate grazing management regimes, which make best use of available ecological heterogeneity in both time and space. Provision of permanent water points will be a critical and costly part of this at many sites.

Importantly, in areas such as central Eastern Cape, achieving this will require not only national legislative hurdles to be overcome but also locally entrenched philosophies of management through fencing. Whilst fencing may be appropriate in some applications (e.g. in managing key resource areas such as arable land allocations), in most cases effective resource management will only be possible through neighbouring settlements engaging with one another to develop co-operative management frameworks based on shared rules (so-called 'social fences') rather than separation by physical boundaries. Furthermore, it is vital that any approach to communal rangeland management acknowledges the considerable social stratification that now exists in the region. The diminished dependence on land-based activities for the rural majority means that natural resource management, whilst still of clear importance in some areas and amongst some sections of communities, is no longer as vital to local livelihoods as it once was. This suggests that local needs must be prioritised on a case by case basis and that any efforts at developing natural resource management capability must also be complemented by the provision of basic services and infrastructure to those whose livelihoods are now firmly tied to an increasingly de-agrarianised economy.

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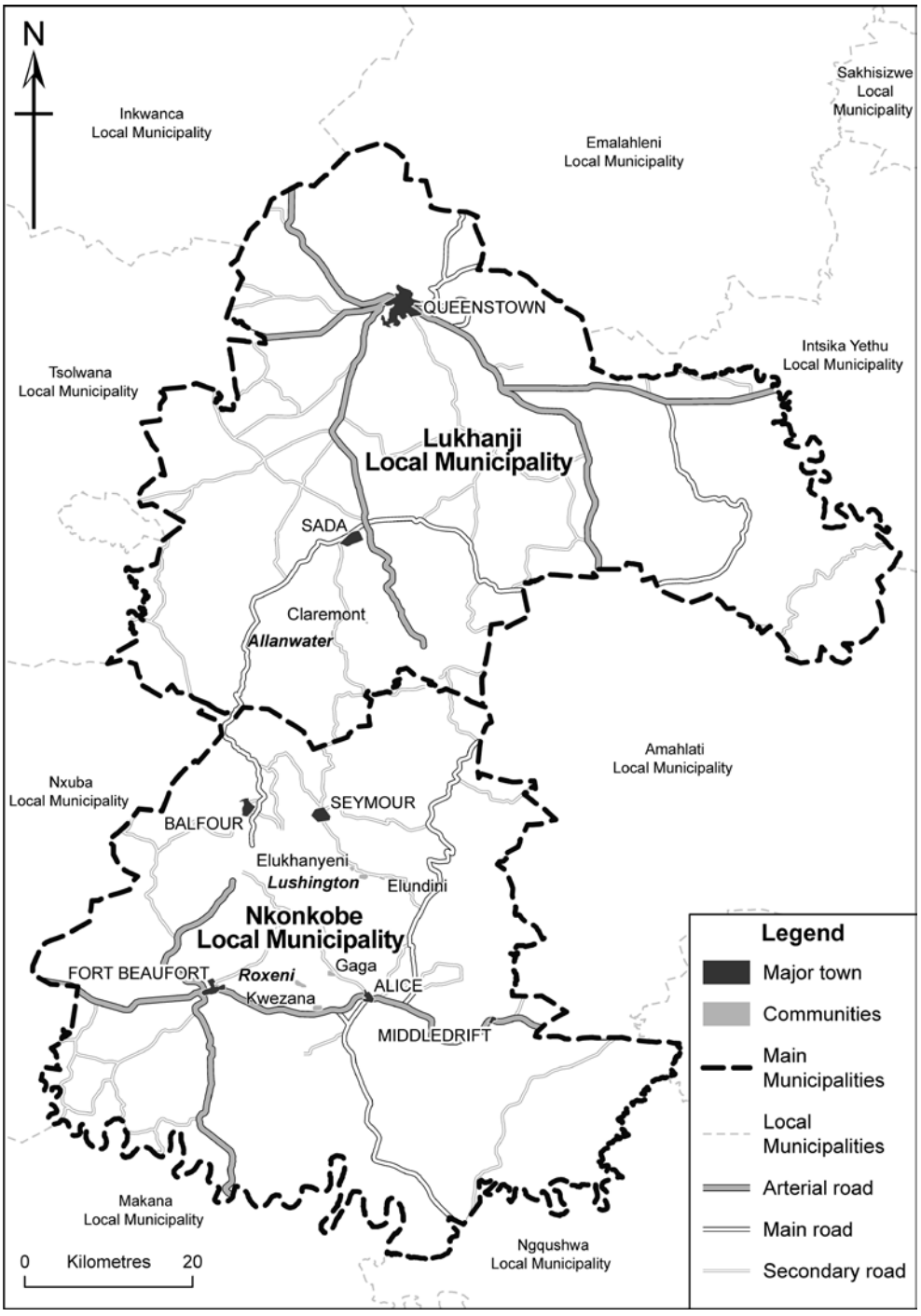
Tables

Table 1

	VILLAGE		
FEATURE	Roxeni	Lushington	Allanwater
Site history	Colonial planning, and betterment	Former commercial farm	Former commercial farm
Village structure	Single settlement	Four separate settlements	Single settlement
Origins of inhabitants	Inhabitants have common origin and are politically unified	Inhabitants have very different origins and politically divided	Inhabitants mostly of common origin and are politically unified
Socio-economic status	Inhabitants relatively wealthy and educated	Inhabitants quite poor, with limited educational attainment	Inhabitants very poor, with relatively little education.
Livelihood basis	Cash income-based	Mixed	Largely agrarian
Institutional control	Farmer's Association – consistently strong.	Resident's Association and sub-committees, fragmented and weak	Resident's and Farmer's Associations, centralised and strong.
Rangeland management system	'Minimum' CPR historically, now open-access	Grazing consistently unregulated and in effect open-access	Basic CPR in operation throughout
Rangeland boundaries	Historically well delineated, now totally unfenced and fuzzy	Defined by fencing in commercial areas but otherwise unclear	Well defined all around by perimeter fencing
Rangeland user group	Undefined due to encroachment on resource by outsiders	Not entirely clear - includes all four sub-settlements but may involve others	Clearly defined as individuals from Allanwater only
Rangeland management rules	Historically tenable but now impossible to enforce due to outsider claims on resource	None apparent – all management at individual level	Defined management system exists but sometimes applied in *ad hoc* manner
Range size	Fairly limited	Extensive	Extensive
Range condition	Very poor	Poor	Good overall but areas of poor quality
Arable cultivation	Very limited and restricted to fenced fields	Widespread and taking place in both fenced and unfenced fields	Widespread using unfenced plots
Arable grazing rights during dry season	Private grazing rights retained over forage during dry season through enclosure	Private grazing rights retained through fencing or cut and carry in unfenced fields	Private grazing rights through cut and carry or *in situ* grazing under supervision

Figures

Figure 1



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